

### Abstract

An XML transformation tool that constructs a relational database with associated physical structures that can be populated with shredded XML data. A mapping transformation enumerator examines queries in the workload and enumerates mapping transformations that use XSD specific constraints and statistics on XML data and can be used to generate mappings from XSD to relational database schema that may lead to better performance in presence of physical design. A design tuner that searches mappings generated from a default mapping using enumerated transformations together with physical design structures associated with those mappings and selects a preferred mapping and the physical design structures. Cost estimates for performing queries in the workload are determined for the relational database implementing the mapping and associated physical design structures.